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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,635	11/30/2004	Allan Bernard	016325-013900US	2823

20350 7590 01/24/2008

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EXAMINER	
CHANDRA, GYAN	
ART UNIT	**PAPER NUMBER**
1646	

MAIL DATE	DELIVERY MODE
01/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/516,635	BERNARD ET AL.	
	Examiner	Art Unit	
	Gyan Chandra	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/27/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17,18,21 and 27-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17,18,21 and 27-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/27/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application, Amendments, And/Or Claims

Claims 1-16, 19-20 and 22-26 are cancelled.

The amendments of claim 17 and the addition of claims 27-31 have been made of record.

Claims 17, 18, 21 and 27-31 are pending and under examination.

Priority

Applicant did not response to the established priority date of the instant invention as of record on pg. 2-3 of the previous office action. Therefore, the priority date for the instant invention is 6/5/2002.

Response to Arguments

Claim Rejections/Objections-withdrawn

Specification:

The objection of disclosure is withdrawn for containing an embedded hyperlink and/or other form of browser-executable code (page 12, line 11) in view of Applicant's amendment of the disclosure by deleting the embedded hyper link in the response filed on 11/27/2007.

Claim Objections:

The objection of claim 17 because the claim recites non-elected inventions (i.e., SEQ ID NO: 4 and 6, and method steps using polynucleotides) is withdrawn in view of Applicant's amendment of claim 17 by deleting non-elected sequences in the response filed on 11/27/2007.

Claim Rejections - 35 USC § 112

The rejection of claims 17-18 and 21 under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for diagnosing for Type 2 diabetes or pre-diabetic condition in an individual is withdrawn in view of Applicant's amendments of claim 17 which is now drawn to detecting the relative level of insulin resistance in an individual, and in view of Applicant's Response filed on 11/27/2007.

Claim Rejections-maintained

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 17, 18 and 21 remain rejected and new claims 27-29 are also rejected under 35 U.S.C. 102(a) as being anticipated by Wahab et al (Biochem. J. 359: 77-87, 2001).

Claims 17-18, 21 and 27-29 are broadly directed to a method of detecting the relative level of insulin resistance in an individual of a polypeptide encoded by a

polynucleotide that hybridizes under stringent conditions to a nucleic acid of SEQ ID NO: 2, wherein an increased level of the polypeptide in the sample compared to a level of the polypeptide in either a lean individual or a previous sample for the individual indicates an increased level of insulin resistance in the individual compared to the insulin resistance in the lean individual or the insulin resistance level of the individual at the time of the previous sample was taken, wherein the detecting step comprises contacting the sample with an antibody that specifically bind to the polypeptide, and wherein the sample is a blood, urine or tissue sample.

Applicants argue (page 7 of Response) that Wahab et al speculate on CTGF's role in diabetic subjects but Wahab et al is silent on how insulin and CTGF interact. Applicants argue that Wahab et al do not teach or suggest a method of detecting the relative level of insulin resistance by detecting CTGF.

Applicants' arguments have been fully considered but they are not persuasive becase Wahab et al teach measuring CTGF levels in renal biopsy specimens from human diabetic nephropathy (DN) patients (page 77, right column). Wahab et al teach using anti-CTGF antibody to measure the level of CTGF polypeptide (page 79, Immunohistochemistry). Wahab et al teach using anti-CTGF antibody for measuring CTGF (table 2, page 80). Although, Wahab et al do not explicitly correlate the level of CTGF with insulin resistance; it is well known in the art that the subjects with type II diabetes inherently have insulin resistance and hyperglycemia and that insulin resistance starts developing early on before diabetes is diagnosed. Therefore, one of the skill in the art would understand that a method of measuring the level of CTGF

in a diabetic subject would also correlate with the level of insulin resistance in said subject.

Claims 17, 18 and 21 remain rejected and new claims 27-29 are also rejected under 35 U.S.C. 102(e) as being anticipated by Weitz et al (2003/0113816, published on 6/19/2003 which claims benefit of US Provisional 60/323,305 filed on 9/18/2001 and has support for the claimed benefit).

Claims 17-18, 21 and 27-29 are broadly directed to a method of detecting the relative level of insulin resistance in an individual of a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a nucleic acid of SEQ ID NO: 2, wherein an increased level of the polypeptide in the sample compared to a level of the polypeptide in either a lean individual or a previous sample for the individual indicates an increased level of insulin resistance in the individual compared to the insulin resistance in the lean individual or the insulin resistance level of the individual at the time of the previous sample was taken, wherein the detecting step comprises contacting the sample with an antibody that specifically bind to the polypeptide, and wherein the sample is a blood, urine or tissue sample.

Applicants argue (page 8 of Response) that Weitz et al teach measuring CTGF in urine of type I diabetics and they teach a correlation of kidney damage with CTGF urine levels but they do not teach or suggest a relationship between CTGF and insulin resistance.

Applicants' arguments have been fully considered but they are not persuasive becase Weitz et al teach measuring CTGF levels in diabetic urine samples (Example 21). The skill of art in the field of diabetes is very high. Although, Weitz et al do not explicitly correlate the level of CTGF with insulin resistance; it is well known in the art that the subjects with diabetes inherently have insulin resistance and hyperglycemia. Therefore, one of the skill in the art would understand that a method of measuring the level of CTGF in a diabetic subject would also correlate with the level of insulin resistance in said subject. Therefore, the rejection is maintained.

New Ground of Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-18, 21, and 28-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The written description in this case only sets forth the polypeptide of SEQ ID NO: 2, and therefore the written description is not commensurate in scope with "any polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a nucleic acid encoding SEQ ID NO: 2."

Claims 17-18, 21, and 28-31 are broadly drawn to any peptide that is encoded by a nucleic acid sequence that hybridizes with a nucleic acid encoding the polypeptide comprising SEQ ID NO: 2 under stringent condition. The claims do not require that the polypeptides possess any characteristic or conserved structure. Thus the claims are drawn to a genus of peptides that is encoded by any nucleic acid sequence that can hybridize with a nucleic acid sequence encoding SEQ ID NO: 2.

The specification on page 13, discloses that the term "stringent hybridization condition" under which a probe will hybridize to its target sequence. To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. Some of the factual considerations that are weighed when determining a written description include the level of skill and knowledge in the art, the disclosure of complete or partial structures, the disclosure of physical and or chemical properties, adequate disclosure of the functional characteristics, the correlation between structure and function, and disclosure of methods of making.

The specification on page 13, discloses that the term "stringent hybridization condition" under which a probe will hybridize to its target sequence, typically in a complex of nucleic acid, but to other sequence. Because stringent condition depends on a nucleic acid sequence, and that said nucleic acid sequence could only be a portion within any large sequence or variants thereof, innumerable number of nucleic acids could hybridize with a nucleic acid that encodes the polypeptide of SEQ ID NO: 2. Therefore, the claims are drawn to a genus of polypeptides that are encoded by any

nucleic acids that can hybridize with a nucleic acid encoding SEQ ID NO: 2. The general knowledge and level of skill in the art do not supplement the omitted description because specific, not general, guidance is what is needed.

Vas-Cath Inc. V. Mahurka, 19 USPQ2d 1111, states that applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention, for purposes of the written description inquiry, is *whatever is now claimed* (see page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (see Vas-Cath at page 1116).

A description of a genus may be achieved by means of a recitation of a representative number of species falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus. Regents of the University of California v. Eli Lilly & Co., 119 F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). In Regents of the University of California v. Eli Lilly (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that, while applicants are not required to disclose every species encompassed by a genus, the description of the genus is achieved by the recitation of a representative number of species falling within the scope of the claimed genus. At section B (1), the court states an adequate written description of a DNA ... requires a precise definition, such as by

structure, formula, chemical name, or physical properties, not a mere wish or plan for obtaining the claimed chemical invention.

As discussed above, the skilled artisan cannot envision the detailed genus of "**any peptide that is encoded by a nucleic acid sequence that hybridizes to a nucleic acid sequence encoding the polypeptide of SEQ ID NO: 2"** and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of making a mutation. The compound itself is required. See Fiers v.Revel, 25USPQ2d 1601 at 1606 (CAFC 1993) and Amgen v.Baird, 30 Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016. One cannot describe what one has not conceived. See Fiddes v. Baird, 30 USPQ2d 148 at 1483. In Fiddes, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class.

Therefore, only the polypeptide of SEQ ID NO: 2, which comprises insulin function, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph.

Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 U.S.C. 112 is severable from its enablement provision (see page 1115).

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gyan Chandra whose telephone number is (571) 272-2922. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol can be reached on (571) 272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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11 January 2008
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/Robert Landsman/
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